PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Jeffrey R. BURY et al.	Docket No.	MBC-0511
Serial No.	10/787,507	Examiner:	Kelechi EGWIM
Filed:	February 26, 2004	Group Art Unit:	1796
Title:	Strength Improvement Admixture		

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APPELLANTS' BRIEF UNDER 37 C.F.R. § 41.37

To the Honorable Commissioner For Patents:

This is an appeal to the Board of Patent Appeals and Interferences (the "Board") from the final rejection set forth in the Office Action mailed October 7, 2008.

In accordance with 37 C.F.R. §41.31, Appellants electronically filed the Notice of Appeal via EFS-Web on March 4, 2009. The Notice of Appeal was accompanied by a Petition For a Two Month Extension of Time under 37 C.F.R. §1.136(a) and the Petition Fee under 37 C.F.R. §1.17(a)(2).

The present appeal is of pending claims 1, 3, 5-9, 12-17, 19-23 and 26-32.

Table of Contents

1. Real Party in Interest 3
2. Related Appeals and Interferences 4
3. Status of Claims 5
4. Status of Amendments 6
5. Summary of Claimed Subject Matter 7
6. Grounds for Rejection to be Reviewed on Appeal 8
7. Argument 9
8. Claims Appendix 16
9. Evidence Appendix 38
10. Related Proceedings Appendix 39

1. Real Party in Interest

The owner of the present patent application is Construction Research & Technology GmbH by virtue of an assignment from the Appellants.

Construction Research & Technology GmbH is a limited liability company organized under the laws of the country of Germany.

The assignment for the present patent application was recorded in the records of the Assignment Division of the United States Patent and Trademark Office (the "Office" or "USPTO") on April 12, 2004 at Reel/Frame 015197/0342.

2. Related Appeals and Interferences

In accordance with 37 C.F.R. §41.37(c)(1)(ii), Appellants hereby inform the Board that there are no other prior pending appeals, interferences, or judicial proceedings known to Appellants, Appellant's legal representative, or assignee which may be related to, directly affect or be directly affected by, or have a bearing on the Board's decision in the pending appeal.

3. Status of Claims

The present application was filed on February 26, 2004 with original claims 1-50.

In response to the Restriction Requirement mailed by the Office on March 27, 2006, Appellants elected claims 1-32 (Group I) for prosecution in present patent application.

Claims 1, 3, 5-9, 12-17, 19-23 and 26-32 are currently under final rejection and constitute the claims on appeal.

Claims 2, 4, 10, 11, 18, 24, 25 and 33-50 have been cancelled.

In accordance with 37 C.F.R. §41.37(viii), appealed claims 1, 3, 5-9, 12-17, 19-23 and 26-32 appear in the attached Appendix.

4. Status of Amendments

A Final Office Action was mailed by the Office on October 7, 2008.

No amendments to pending claims 1, 3, 5-9, 12-17, 19-23 and 26-32 have been filed with the Office subsequent to the mailing date of the Final Office Action.

5. Summary of Claimed Subject Matter

The appealed claims are directed a strength improvement admixture composition comprising (a) polycarboxylate dispersant; (b) set retarder; and (c) a strength improvement additive selected from the group consisting of poly(hydroxyalkylated)polyethyleneamines, poly(hydroxyalkylated)polyethylenepolyamines, poly(hydroxyalkylated)polyethyleneimines, poly(hydroxyalkylated)polyamines, hydrazines, 1,2-diaminopropane, polyglycoldiamine, poly(hydroxyalkyl)amines and mixtures thereof, wherein the amount of polycarboxylate dispersant is from about 5% to about 80%, the set retarder is from about 0.5% to about 40%, and the strength improvement additive is from about 0.5% to about 40% based on the total dry weight of the admixture composition components. See Specification at Page 3, Lines 9-17; Pages 5, Lines 17-19; Page 20, Lines 9-10; Page 20, Lines 25-28; Pages 47, Lines 15-19 (original claim 2).

The appealed claims are also directed to a cementitious composition comprising hydraulic cement and a strength improvement admixture composition, said admixture composition comprising (a) polycarboxylate dispersant; (b) set retarder; and (c) a strength improvement additive selected from the group consisting of poly(hydroxyalkylated)polyethyleneamines, poly(hydroxyalkylated)polyethylenepolyamines, poly(hydroxyalkylated)polyethyleneimines, poly(hydroxyalkylated)polyamines, hydrazines, 1,2-diaminopropane, polyglycoldiamine, poly(hydroxyalkyl)amines and mixtures thereof, wherein the amount of polycarboxylate dispersant is from about 5% to about 80%, the set retarder is from about 0.5% to about 40%, and the strength improvement additive is from about 0.5% to about 40% based on the total dry weight of the admixture composition components. See Specification at 9, Lines 19-27; Pages 20, Lines 18-28; Page 50, Line 24 through Pages 51, Line 2 (original claim 15).

6. Grounds of Rejection to be Reviewed on Appeal

The sole ground of rejection to be reviewed in the present appeal is the rejection of claims 1, 3, 5-9, 12-17, 19-23 and 26-32 under 35 U.S.C. § 102(e) in view of United States Patent Application Publication No. 2003/0127026A1 to Anderson et al.

7. Argument

Claims 1-3, 5-9, 12-17, 19-23 and 26-32 have been rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Application No. 2003/0127026 ("Anderson"). Appellants continue to respectfully traverse this rejection.

Table A of the Anderson reference forms the sole basis for the 102(e) rejection of the pending claims. In the Office Action mailed on December 5, 2006, it was specifically alleged that Table A of the Anderson reference taught an admixture comprising 20-30% polycarboxylate dispersant, 30-50% strength improvement additive (alleged to be polyhydroxylaklyamine) and 10-20% set retarder. See Office Action mailed December 5, 2006 at Page 3, Paragraph 7.

The 102(e) rejection over the Anderson reference was maintained in the Office Actions mailed on July 27, 2007 and June 2, 2008 for "reasons cited in previous actions". See July 27, 2007 Office Action at Page 3, Paragraph 5 and June 2, 2008 Office Action at Page 2, Paragraph 2.

The Anderson Reference

The Anderson reference discloses a high early-strength cementitious composition. The high early-strength cementitious composition comprises a hydraulic cement and a combination admixture system. The combination admixture system comprises a polycarboxylate dispersant, a set accelerator and a set retarder. The use of the combination admixture system provides a cementitious composition that can achieve a flexural strength of at least 400 psi and a compressive strength of at least 2200 psi within 4 hours after the composition has been placed. Because of the early high-strength development and predictable working time, the cementitious composition is useful where fast-setting cementitious compositions are desired.

The Anderson reference expressly discloses that "[T]he weight percentages of the components in the high early-strength composition of admixtures are preferably greater than 0 to about 5% retarder; about 5% to about 12% dispersant; and about 85% to about 95% accelerator based on the solids (dry) content. See Anderson at Paragraph 0156. The Anderson reference does not expressly disclose the inclusion of a strength improvement additive.

The Present Claims

The presently claimed strength improvement admixture and cementitious composition comprises about 5 to about 80% polycarboxylate dispersant, about 0.5 to about 40% set retarder, and about 0.5 to about 40% strength improvement additive. The ratio of the three admixture components (ie, dispersant, retarder, strength improvement additive) are based on the total dry weight of the admixture composition.

In contrast to the present claims, the Anderson reference unequivocally discloses that the composition of admixtures includes **about 85% to about 95% accelerator.** To the extent that the Examiner has equated a set accelerator with the presently claimed strength improvement additive, it is clear that the Anderson reference clearly discloses at least 85% accelerator is required in the admixture, while the range of strength improvement additive in the admixture recited in the present claims is from 0.5 to 40%. Because the Anderson reference requires at least 85% accelerator in its composition of admixtures, which does not overlap with the presently claimed range of about 0.5% to about 40% strength improvement additive, Anderson does not anticipate either independent claims 1 or 15.

In the July 27, 2007 Office Action, it was alleged, "[W]hile the percentages in Table A are approximate solids content, then percentages are based on 100% of the solids content of the admixture components, as evidenced by the fact that when each component is maximized, the total adds up to 100. This provides us with the ratio of components. One of ordinary skill in the art would understand the approximate solids content in Table A as identifying the ratio of the three components, thereby meeting the claims." See Office Action mailed July 27, 2007 at Page 3, Paragraph 7 under the heading "Response to Arguments".

The Anderson reference is directed to a composition of commercially available admixture materials, namely, polycarboxylate dispersants (GLENIUM), set accelerators (POZZOLITH and RHEOCRETE), and set retarders (DELVO). Table A simply provides dosage ranges for the separate admixture products that may be used across a wide variety of end applications. Table A does not indicate a ratio of dispersant:accelerator:retarder for the early high-strength composition of admixtures. Thus, Table A does not refer to the dosage ratios for the polycarboxylate dispersant, set accelerator and set retarder present in the high early strength cementitious composition disclosed by Anderson. **The amounts and ratio of the dispersant, accelerator and retarder are dictated solely by Paragraph [0156] of Anderson.** Therefore, a general dosage range of Table A is simply not relevant. Furthermore, the dosage ranges of Table A are reported as fluid ounces/100 lbs cement, while the weight percent of admixture components of Paragraph [0156] are reported at weight percent based on the total solid (dry) content of admixture components.

Appellants have submitted herewith a copy of the 132 Declaration of Joseph Daczko, a named inventor of the Anderson reference, which was originally submitted with their Request For Continued Examination filed on September 22, 2008. See Exhibit A.

In contrast to the presently pending independent claims, the Daczko Declaration confirms that Anderson expressly discloses "[T]he weight percentages of the components in the high early-strength composition of admixtures are preferably greater than 0% to about 2% retarder; about 5% to about 12% dispersant; and about 85% to about 95% accelerator based on solid (dry) content." This confirms that dosage ranges for polycarboxylate, set accelerator and set retarder in Table A of Anderson do not specify the weight percentage of each component in the composition of admixtures.

Anderson discloses that the dispersant, accelerator and set retarder are separate commercially available admixtures. Anderson discloses that suitable polycarboxylate dispersants are commercially available under the trademarks GLENIUM, ADVA, VISCOCRETE, or SUPLERFLUX, See Anderson at Page 3, Paragraph [0041]; that suitable set accelerators are commercially available under the trademarks POZZOLITH and RHEOCRETE, See Anderson at Page 7, Paragraph [0142]; and that suitable set retarders are commercially available under the trademark DELVO, See Anderson at Page 8, Paragraph [0156].

The solids content ranges set forth in Table A of Anderson do not specify the weight percentage of the each component of the composition of admixtures, based on the total dry weight of the admixture composition. More exactly, the ranges set forth in Table A of Anderson actually represent the "approximate solids content" of each individual, commercially available admixture component, before the individual admixture components are added to the cementitious mixture. The approximate solids content of each commercially available component of the Anderson composition of admixtures, and the dosages of each component based on total dry weight of the presently claimed admixture are two entirely different and separate concepts.

By way of illustration, an approximate solids content of 30-50% for an accelerator means that the bottle of liquid accelerator itself contains 30-50% solids in the solution. Exhibit B attached hereto is page 1 of the Material Safety Data Sheet for POZZOLITH® NC 534. It is a liquid that may contain 30-60% calcium nitrate and 1-5% sodium thiocyanate. Thus, a 100ml bottle of POZZOLITH NC534 contains from 31-65% solids content. The range of 30-50% set forth in Table A does not identify an admixture containing 30-50% accelerator, but rather, a commercially available liquid accelerator component that contains 30-50% dissolved or dispersed solids.

Taking into the account the Daczko 132 Declaration submitted herewith, Appellants again offer a hypothetical composition of admixtures prepared in accordance with Paragraph [0156] of the Anderson reference and having the following composition:

2% retarder
12% dispersant
86% accelerator
100% total based on solids (dry) content

This hypothetical composition of admixtures may be prepared from a commercially available liquid set retarder having a solids content of 20 percent (20g solids in 100ml solvent), a commercially available liquid dispersant having a solids content of 30 percent (30g solids in 100ml solvent), and a commercially available liquid set accelerator having a solids content of 50 percent (50g solids in 100 ml solvent).

To prepare the disclosed composition of admixtures, one must use a 0.4 ml dose of the 20% retarder solution to provide 2% retarder one must use a 3.6ml dose of the 30% dispersant solution to provide 12% dispersant; and one must use a 43ml dose of the 50% accelerator solution to provide 86% accelerator. The approximate solids content column of Table A of Anderson merely identifies solids content of suitable components, but does not provide the ratio of each component of the composition of admixtures. Again, Appellants respectfully submit that the ratio of the three components is dictated solely by Paragraph [0156] of Anderson. Because the solids content information provided for the dispersant, accelerate and retarder provided in Table A of Anderson does not provide a ratio of these components in admixture, Table A does not anticipate present claims 1 and 15.

In the June 2, 2008 Office Action, it was alleged, "[E]ven if the approximate solids contents of Table A of Anderson et al were in reference to the formulations prior to their admixture, the Table also provides a general dosage range and a preferred dosage range, both of which still correspond to solids content percentages/ratios for the components that are consistent with the ranges applicant is claiming." See Office Action mailed June 2, 2008 at Page 2, Paragraph 4 under the heading "Response to Arguments". The Final Office Action mailed October 7, 2008 alleges, "it is maintained that recommended dosage ranges, however one choose to interpret them, are sufficient to represent relative recommended amount of each of the component, and thus, ratios/percentages of the components in the composition." . . . "The Examiner finds that sufficient data is provided in the reference Table to provide the ratio of the components anticipatory enough to rejection the present claims." See Final Office Action mailed October 7, 2008 at Page 3, Paragraph 5.

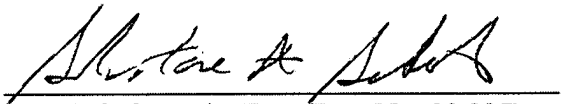
Appellants traverse the allegations set forth in the June 2, 2008 and October 7, 2008 Office Actions. Regardless of the dosage ranges reported in Table A of Anderson, Paragraph [0156] still controls the amount of dispersant, accelerator and retarder to be included in the admixture composition. In the case of Anderson, it specifically requires that the accelerator be present in the amount of 85% to 95% weight percent. The general and preferred dodge ranges for the off-the-shelf products provided in Table A are irrelevant to the express teachings of Paragraph [0156]. The Examiner is merely picking and choosing from portions of the Anderson reference to support his position of anticipation and is ignoring the entire reference for what it teaches one having ordinary skill in the art. One having ordinary skill in the art would read Anderson as requiring at least 85% percent accelerator in its admixture. There is no other possible interpretation of Paragraph [0156] and no other teachings in the Anderson reference regarding ratios of dispersant to accelerator to retarder.

In view of the above amendments and remarks, Applicants respectfully request the 35 U.S.C. §102 (e) rejection be withdrawn, and that the Examiner issue a formal notice of allowance directed to claims 1, 3, 5-9, 12-17, 19-23 and 26-32. Should the Examiner have any questions regarding the remarks set forth herein, Applicants' undersigned attorney would welcome a telephone call.

Conclusion

Appellants submit that the remarks presented hereinabove traverse all the existing 35 U.S.C. 102(e) rejection of all pending claims. Appellants respectfully request the Board to reverse the rejection of these claims. Appellants further respectfully request the Board to reverse the Final Office Action in this case and to require the Examiner to indicate the allowability of the claims 1, 3, 5-9, 12-17, 19-23 and 26-32 over the art of record.

Respectfully submitted,



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5-4-09

Date

8. Claims Appendix

In accordance with 37 C.F.R. §41.37 (c)(1)(ix), the claims on appeal are as follows:

1. (Previously Presented) A strength improvement admixture composition comprising:
   a. polycarboxylate dispersant;
   b. set retarder; and
   c. a strength improvement additive selected from the group consisting of poly(hydroxyalkylated)polyethyleneamines, poly(hydroxyalkylated)polyethylenepolyamines, poly(hydroxyalkylated)polyethyleneimines, poly(hydroxyalkylated)polyamines, hydrazines, 1,2-diaminopropane, polyglycoldiamine, poly(hydroxyalkyl)amines and mixtures thereof;

   wherein the amount of polycarboxylate dispersant is from about 5% to about 80%, the set retarder is from about 0.5% to about 40%, and the strength improvement additive is from about 0.5% to about 40% based on the total dry weight of the admixture composition components.

2. (Cancelled).

3. (Original) The admixture composition of claim 1, wherein the amount of polycarboxylate dispersant is from about 20% to about 60%, the set retarder is from about 2% to about 25%, and the strength improvement additive is from about 2% to about 25% based on the total dry weight of the admixture composition components.

4. (Cancelled).

5. (Original) The admixture composition of claim 1, wherein the strength improvement additive is selected from the group consisting of N,N,N'-tri-(hydroxyethyl)ethylenediamine, N,N,N'-tri-(hydroxyethyl)diethylenediamine, N,N'-di-(hydroxyethyl)ethylenediamine, N,N'-bis(2-hydroxypropyl)diethylenetriamine, N,N,N',N'-tetra(hydroxyethyl)ethylenediamine, N,N,N',N',N"-penta(hydroxyethyl)diethylenetriamine, N,N'-bis(2-hydroxypropyl)-N,N,N'-tri(hydroxyethyl)diethylenetriamine, and mixtures thereof.

6. (Original) The admixture composition of claim 1, wherein the strength improvement additive comprises poly(hydroxyethyl)polyethyleneimine.

7. (Original) The admixture composition of claim 1, wherein the strength improvement additive comprises poly(hydroxyalkylated)polyethyleneamine having the following formula:

$$(R)_2N[\underset{\substack{|\\R}}{CH_2CH_2N}]_xR$$

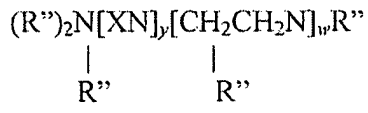
wherein x is 1,2 or 3 and R is selected from the group consisting of hydrogen, 2-hydroxyethyl, and 2-hydroxypropyl, each R can be the same or different, and at least 40% of the R groups are hydroxyalkyl, with no more than 40% of the R groups being hydroxypropyl.

8. (Original) The admixture composition of claim 1, wherein the strength improvement additive has the following formula:

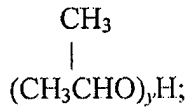
$$(R')_2NCH_2CH_2N(R')_2$$

wherein R' is $(CH_2CH_2O)_yH$, wherein y is 0, 1 or 2, wherein no more than one-half (1/2) of the compounds of the formula have y equal to 0, and each R' can be the same or different.

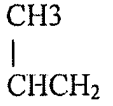
9. (Original) The admixture composition of claim 1, wherein the strength improvement additive has the following formula:



wherein R" is selected from the group consisting of $(CH_2CH_2O)_yH$ and



wherein X is a covalent bond or a divalent organic radical selected from the group consisting of CH_2, CH_2CH_2,



and $CH_2CH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2CH_2$; wherein y and v are 0, 1 or 2;
wherein w is 0 or 1;
wherein v and w cannot both be 0; and wherein no more than one-half (1/2) of the R" groups are hydrogen.

10. (Cancelled).

11. (Cancelled).

12. (Previously Presented) The admixture composition of claim 1 wherein the set retarder is selected from the group consisting of an oxy-boron compound, a polyphosphonic acid, lignosulfonates, sulphonic acid-acrylic acid copolymer, and their corresponding salts, carboxylic acid, hydroxycarboxylic acid, polycarboxylic acid, hydroxylated carboxylic acid, fumaric, itaconic, malonic, borax, gluconic, and tartaric acid, ascorbic acid, isoascorbic acid, polyhydroxysilane, polyacrylamide, carbohydrates and mixtures thereof.

13. (Original) The admixture composition of claim 1 further comprising at least one of set accelerators, air detraining agents, air entraining agents, shrinkage reducing admixtures, water reducers, foaming agents, dampproofing admixtures, pumping aids, fungicidal admixtures, insecticidal admixtures, germicidal admixtures, alkali activity reducers, bonding admixtures, corrosion inhibitors, and pigments.

14. (Original) The admixture composition of claim 1, wherein the admixture composition is in an aqueous solution.

15. (Previously Presented) A cementitious composition comprising hydraulic cement and a strength improvement admixture composition, said admixture composition comprising:

a. polycarboxylate dispersant;
b. set retarder; and
c. a strength improvement additive selected from the group consisting of a poly(hydroxyalkylated)polyethyleneamines, poly(hydroxyalkylated)polyethylenepolyamines, poly(hydroxyalkylated)polyethyleneimines, poly(hydroxyalkylated)polyamines, hydrazines, 1,2-diaminopropane, polyglycoldiamine, poly(hydroxyalkyl)amines and mixtures thereof;

wherein the amount of polycarboxylate dispersant is from about 5% to about 80%, the set retarder is from about 0.5% to about 40%, and the strength improvement additive is from about 0.5% to about 40% based on the total dry weight of the admixture composition components.

16. (Original) The cementitious composition of claim 15, wherein the amount of polycarboxylate dispersant is from about 0.02% to about 2%, the set retarder is from about 0.002% to about 0.2%, the strength improvement additive is from about 0.0001% to about 0.2% by weight of cementitious binder.

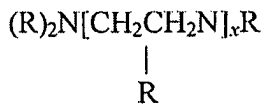
17. (Original) The cementitious composition of claim 15, wherein the amount of polycarboxylate dispersant is from about 0.02% to about 0.24%, the set retarder is from about 0.005% to about 0.08%, the strength improvement additive is from about 0.004% to about 0.08%by weight of cementitious binder.

18. (Cancelled).

19. (Original) The cementitious composition of claim 15, wherein the strength improvement additive is selected from the group consisting of N,N,N'-tri-(hydroxyethyl)ethylenediamine, N,N,N'-tri-(hydroxyethyl)diethylenediamine, N,N'-di-(hydroxyethyl)ethylenediamine, N,N'-bis(2-hydroxypropyl)diethylenetriamine, N,N,N',N'-tetra(hydroxyethyl)ethylenediamine, N,N,N',N',N''-penta(hydroxyethyl)diethylenetriamine, N,N'-bis(2-hydroxypropyl)-N,N,N'-tri(hydroxyethyl)diethylenetriamine, and mixtures thereof.

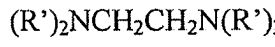
20. (Original) The cementitious composition of claim 15, wherein the strength improvement additive comprises poly(hydroxyethyl)polyethyleneimine.

21. (Original) The cementitious composition of claim 15, wherein the strength improvement additive comprises poly(hydroxyalkylated)polyethyleneamine having the following formula:



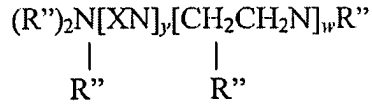
wherein x is 1,2 or 3 and R is selected from the group consisting of hydrogen, 2-hydroxyethyl, and 2-hydroxypropyl, each R can be the same or different, and at least 40% of the R groups are hydroxyalkyl, with no more than 40% of the R groups being hydroxypropyl.

22. (Original) The cementitious composition of claim 15, wherein the strength improvement additive has the following formula:

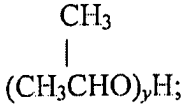


wherein R' is $(CH_2CH_2O)_yH$, wherein y is 0, 1 or 2, wherein no more than one-half (1/2) of the compounds of the formula have y equal to 0, and each R' can be the same or different.

23. (Original) The cementitious composition of claim 15, wherein the strength improvement additive has the following formula:



wherein R" is selected from the group consisting of $(CH_2CH_2O)_yH$ and



wherein X is a covalent bond or a divalent organic radical selected from the group consisting of CH_2, CH_2CH_2,

$$\begin{array}{l} CH3 \\ | \\ CHCH_2 \end{array}$$

and $CH_2CH_2CH_2OCH_2CH_2OCH_2CH_2OCH_2CH_2CH_2$; wherein y and v are 0, 1 or 2; wherein w is 0 or 1;
wherein v and w cannot both be 0; and wherein no more than one-half (1/2) of the R" groups are hydrogen.

24. (Cancelled).

25. (Cancelled).

26. (Previously Presented) The cementitious composition of claim 15 wherein the set retarder is selected from the group consisting of an oxy-boron compound, a polyphosphonic acid, lignosulfonates, sulphonic acid-acrylic acid copolymer, and their corresponding salts, carboxylic acid, hydroxycarboxylic acid, polycarboxylic acid, hydroxylated carboxylic acid, fumaric, itaconic, malonic, borax, gluconic, and tartaric acid, ascorbic acid, isoascorbic acid, polyhydroxysilane, polyacrylamide, carbohydrates and mixtures thereof.

27. (Original) The cementitious composition of claim 15, wherein the cement is selected from the group consisting of portland cement, modified portland cement, or masonry cement, and mixtures thereof.

28. (Original) The cementitious composition of claim 15 wherein the hydraulic cement is portland cement.

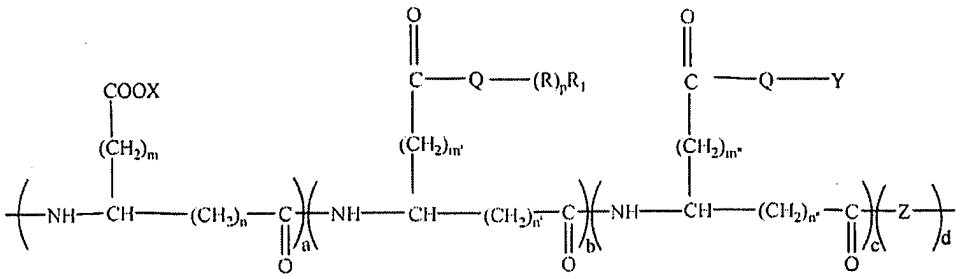
29. (Original) The cementitious composition of claim 15 further comprising a cement admixture or additive that is selected from the group consisting of set accelerator, air detraining agent, air entraining agent, foaming agent, corrosion inhibitor, shrinkage reducing admixture, water reducer, fiber, pigment, pozzolan, clay, strength enhancing agents, rheology modifying agents, water repellents, wetting agents, water soluble polymers, dampproofing admixtures, gas formers, permeability reducers, pumping aids, fungicidal admixtures, germicidal admixtures, insecticidal admixtures, aggregates, alkali-reaction reducers, bonding admixtures, and mixtures thereof.

30. (Original) The cementitious composition of claim 29, wherein the aggregate is at least one of silica, quartz, crushed round marble, glass spheres, granite, limestone, calcite, feldspar, alluvial sands, and sand.

31. (Original) The cementitious composition of claim 29, wherein the pozzolan is at least one of natural pozzolan, metakaolin, fly ash, silica fume, calcined clay, and blast furnace slag.

32. (Original) The composition of claim 1 or 15 wherein the polycarboxylate dispersant comprises at least one of:

a) a dispersant of Formula (I):



wherein in Formula (I)

X is at least one of hydrogen, an alkali earth metal ion, an alkaline earth metal ion, ammonium ion, or amine;

R is at least one of C_1 to C_6 alkyl(ene) ether or mixtures thereof or C_1 to C_6 alkyl(ene) imine or mixtures thereof;

Q is at least one of oxygen, NH, or sulfur;

p is a number from 1 to about 300 resulting in at least one of a linear side chain or branched side chain;

R_1 is at least one of hydrogen, C_1 to C_{20} hydrocarbon, or functionalized hydrocarbon containing at least one of –OH, -COOH, an ester or amide derivative of –COOH, sulfonic acid, an ester or amide derivative of sulfonic acid, amine, or epoxy;

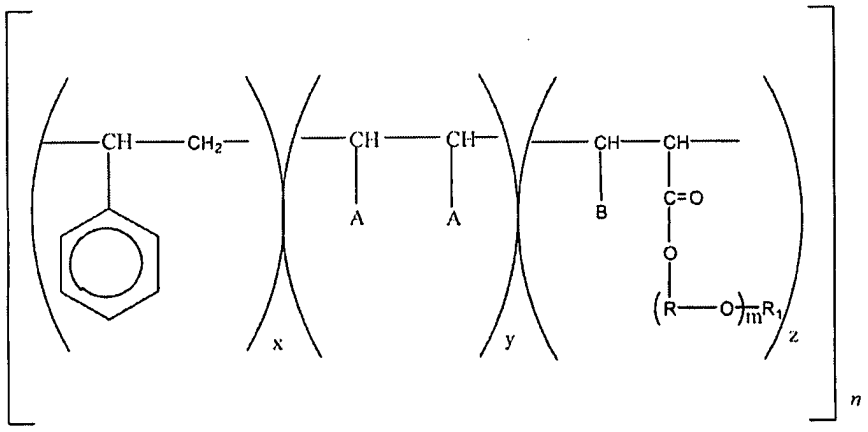
Y is at least one of hydrogen, an alkali earth metal ion, an alkaline earth metal ion, ammonium ion, amine, a hydrophobic hydrocarbon or polyalkylene oxide moiety that functions as a defoamer;

m, m', m'', n, n', and n'' are each independently 0 or an integer between 1 and about 20;

Z is a moiety containing at least one of i) at least one amine and one acid group, ii) two functional groups capable of incorporating into the backbone selected from the group consisting of dianhydrides, dialdehydes, and di-acid-chlorides, or iii) an imide residue; and

wherein a, b, c, and d reflect the mole fraction of each unit wherein the sum of a, b, c, and d equal one, wherein a, b, c, and d are each a value greater than or equal to zero and less than one, and at least two of a, b, c, and d are greater than zero;

b) a dispersant of Formula (II):



wherein in Formula (II):

A is COOM or optionally in the "y" structure an acid anhydride group (-CO-O-CO-) is formed in place of the A groups between the carbon atoms to which the A groups are bonded to form an anhydride;

B is COOM

M is hydrogen, a transition metal cation, the residue of a hydrophobic polyalkylene glycol or polysiloxane, an alkali metal ion, an alkaline earth metal ion, ferrous ion, aluminum ion, (alkanol)ammonium ion, or (alkyl)ammonium ion;

R is a C_{2-6} alkylene radical;

R1 is a C_{1-20} alkyl, C_{6-9} cycloalkyl, or phenyl group;

x, y, and z are a number from 0.01 to 100;

m is a number from 1 to 100; and

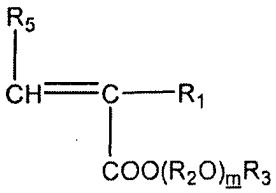
n is a number from 10 to 100;

c) a dispersant comprising at least one polymer or a salt thereof having the form of a copolymer of

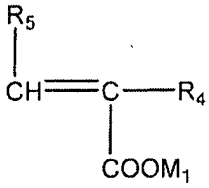
i) a maleic anhydride half-ester with a compound of the formula $RO(AO)_mH$, wherein R is a C_1-C_{20} alkyl group, A is a C_{2-4} alkylene group, and m is an integer from 2-16; and

ii) a monomer having the formula $CH_2=CHCH_2-(OA)_nOR$, wherein n is an integer from 1-90 and R is a C_{1-20} alkyl group;

d) a dispersant obtained by copolymerizing 5 to 98% by weight of an (alkoxy)polyalkylene glycol mono(meth)acrylic ester monomer (a) represented by the following general formula (1):



(1)

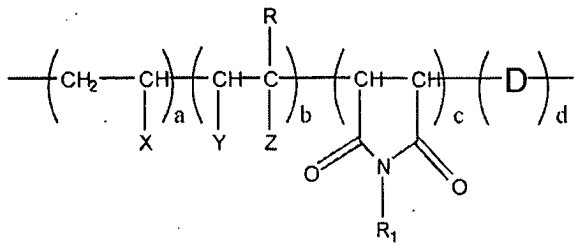


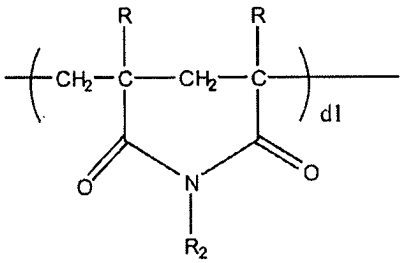
(2)

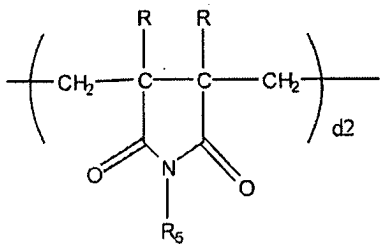
wherein R_1 stands for hydrogen atom or a methyl group, R_2O for one species or a mixture of two or more species of oxyalkylene group of 2 to 4 carbon atoms, providing two or more species of the mixture may be added either in the form of a block or in a random form, R_3 for a hydrogen atom or an alkyl group of 1 to 5 carbon atoms, and m is a value indicating the average addition mol number of oxyalkylene groups that is an integer in the range of 1 to 100, 95 to 2% by weight of a (meth)acrylic acid monomer (b) represented by the above general formula (2), wherein R_4 and R_5 are each independently a hydrogen atom or a methyl group, and M_1 for a hydrogen atom, a monovalent metal atom, a divalent metal atom, an ammonium group, or an organic amine group, and 0 to 50% by weight of other monomer (c) copolymerizable with these monomers, provided that the total amount of (a), (b), and (c) is 100% by weight;

e) a graft polymer that is a polycarboxylic acid or a salt thereof, having side chains derived from at least one species selected from the group consisting of oligoalkyleneglycols, polyalcohols, polyoxyalkylene amines, and polyalkylene glycols;

f) a dispersant of Formula (III):







wherein in Formula (III):

D = a component selected from the group consisting of the structure d1, the structure d2, and mixtures thereof;

X = H, CH_3, C_2 to C_6 Alkyl, Phenyl, p-Methyl Phenyl, or Sulfonated Phenyl;

Y = H or -COOM;

R = H or CH_3;

Z = H, $-SO_3M$, $-PO_3M$, -COOM, $-O(CH_2)_nOR_3$ where n= 2 to 6, $-COOR_3$, or $-(CH_2)_nOR_3$ where n = 0 to 6, $-CONHR_3$, $-CONHC(CH_3)_2$ CH_2SO_3M, $-COO(CHR_4)_nOH$ where n= 2 to 6, or $-O(CH_2)_nOR_4$ wherein n = 2 to 6;

R_1, R_2, R_3, R_5 are each independently $-(CHRCH_2O)_mR_4$ random copolymer of oxyethylene units and oxypropylene units where m= 10 to 500 and wherein the amount of oxyethylene in the random copolymer is from about 60% to 100% and the amount of oxypropylene in the random copolymer is from 0% to about 40%;

R_4 = H, Methyl, C_2 to about C_6 Alkyl, or about C_6 to about C_{10} aryl;

M = H, Alkali Metal, Alkaline Earth Metal, Ammonium, Amine, triethanol amine, Methyl, or C_2 to about C_6 Alkyl;

a = 0 to about 0.8;

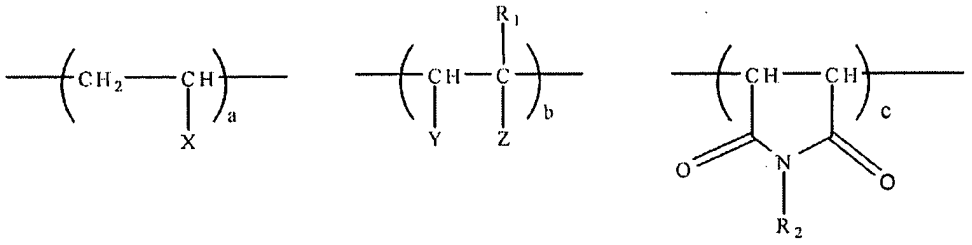
b = about 0.2 to about 1.0;

c = 0 to about 0.5;

d = 0 to about 0.5; and

wherein a, b, c, and d represent the mole fraction of each unit and the sum of a, b, c, and d is 1.0;

g) a dispersant of Formula (IV):



wherein in Formula (IV):

the "b" structure is one of a carboxylic acid monomer, an ethylenically unsaturated monomer, or maleic anhydride wherein an acid anhydride group (-CO-O-CO-) is formed in place of the groups Y and Z between the carbon atoms to which the groups Y and Z are bonded respectively, and the "b" structure must include at least one moiety with a pendant ester linkage and at least one moiety with a pendant amide linkage;

X = H, CH_3, C_2 to C_6 Alkyl, Phenyl, p-Methyl Phenyl, p-Ethyl Phenyl, Carboxylated Phenyl, or Sulfonated Phenyl;

Y = H, -COOM, -COOH, or W;

W = a hydrophobic defoamer represented by the formula $R_5O\text{-}(CH_2CH_2O)_s\text{-}(CH_2C(CH_3)HO)_t\text{-}(CH_2CH_2O)_u$ where s, t, and u are integers from 0 to 200 with the proviso that t>(s+u) and wherein the total amount of hydrophobic defoamer is present in an amount less than about 10% by weight of the polycarboxylate dispersant;

Z = H, -COOM, $-O(CH_2)_nOR_3$ where n= 2 to 6, $-COOR_3$, $-(CH_2)_nOR_3$ where n = 0 to 6, or $-CONHR_3$;

R_1 = H, or CH_3;

R_2, R_3, are each independently a random copolymer of oxyethylene units and oxypropylene units of the general formula $-(CH(R_1)CH_2O)_mR_4$ where m=10 to 500 and wherein the amount of oxyethylene in the random copolymer is from about 60% to 100% and the amount of oxypropylene in the random copolymer is from 0% to about 40%;

R_4 = H, Methyl, or C_2 to C_8 Alkyl;

R_5 = C_1 to C_{18} alkyl or C_6 to C_{18} alkyl aryl;

M = Alkali Metal, Alkaline Earth Metal, Ammonia, Amine, monoethanol amine, diethanol amine, triethanol amine, morpholine, imidazole;

a = 0.01-0.8;

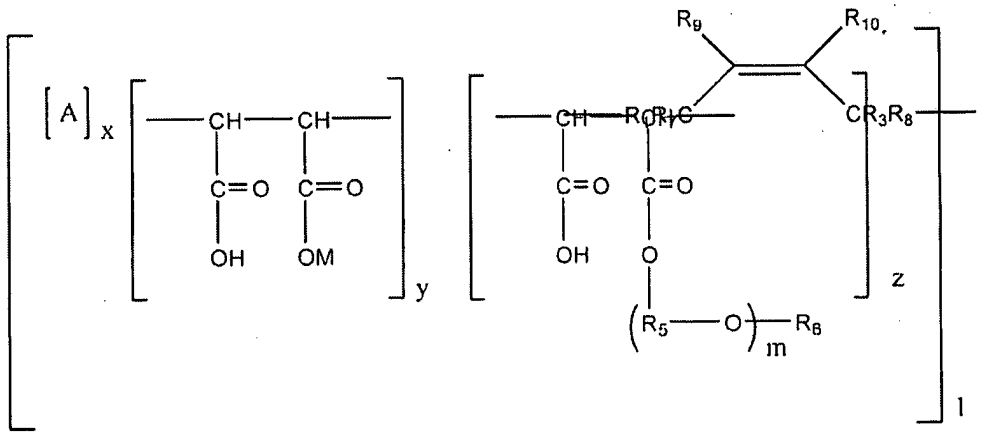
b = 0.2-0.99;

c = 0-0.5; and

wherein a, b, c represent the mole fraction of each unit and the sum of a, b, and c, is 1;

h) a random copolymer corresponding to the following Formula (V) in free acid or salt form having the following monomer units and numbers of monomer units:

wherein A is selected from the moieties (i) or (ii)



(i) $-CR_1R_2-CR_3R_4-$ (ii)

wherein R_1 and R_3 are selected from substituted benzene, C_{1-8} alkyl, C_{2-8} alkenyl, C_{2-8} alkylcarbonyl, C_{1-8} alkoxy, carboxyl, hydrogen, and a ring, R_2 and R_4 are selected from the group consisting of hydrogen and C_{1-4} alkyl, wherein R_1 and R_3 can together with R_2 and/or R_4 when R_2 and/or R_4 are C_{1-4} alkyl form the ring;

R_7, R_8, R_9, and R_{10} are individually selected from the group consisting of hydrogen, C_{1-6} alkyl, and a C_{2-8} hydrocarbon chain, wherein R_1 and R_3 together with R_7 and/or R_8, R_9, and R_{10} form the C_{2-8} hydrocarbon chain joining the carbon atoms to which they are attached, the hydrocarbon chain optionally having at least one anionic group, wherein the at least one anionic group is optionally sulfonic;

M is selected from the group consisting of hydrogen, and the residue of a hydrophobic polyalkylene glycol or a polysiloxane, with the proviso that when A is (ii) and M is the residue of a hydrophobic polyalkylene glycol, M must be different from the group $-(R_5O)_mR_6$;

R_5 is a C_{2-8} alkylene radical;

R_6 is selected from the group consisting of C_{1-20} alkyl, C_{6-9} cycloalkyl and phenyl;

n, x, and z are numbers from 1 to 100;

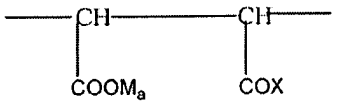
y is 0 to 100;

m is 2 to 1000;

the ratio of x to (y+z) is from 1:10 to 10:1 and the ratio of y:z is from 5:1 to 1:100;

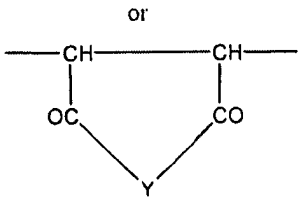
i) a copolymer of oxyalkyleneglycol-alkenyl ethers and unsaturated dicarboxylic acids, comprising:

i) 0 to 90 mol % of at least one component of the formula 3a or 3b:



(3 a)

or



(3 b)

wherein M is a hydrogen atom, a mono- or divalent metal cation, an ammonium ion or an organic amine residue, a is 1, or when M is a divalent metal cation a is ½;

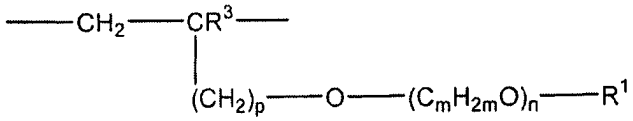
wherein X is $-OM_a$,

$-O-(C_mH_{2m}O)_n-R^1$ in which R^1 is a hydrogen atom, an aliphatic hydrocarbon radical containing from 1 to 20 carbon atoms, a cycloaliphatic hydrocarbon radical containing 5 to 8 carbon atoms or an optionally hydroxyl, carboxyl, C_{1-14} alkyl, or sulphonic substituted aryl radical containing 6 to 14 carbon atoms, m is 2 to 4, and n is 0 to 100,

$-NHR_2$,$-N(R^2)_2$ or mixtures thereof in which $R^2=R^1$ or $-CO-NH_2$; and

wherein Y is an oxygen atom or $-NR^2$;

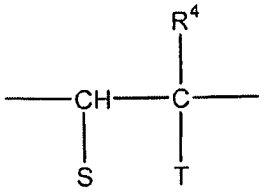
ii) 1 to 89 mol% of components of the general formula 4:



(4)

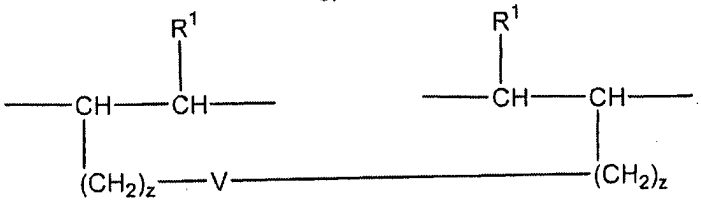
wherein R_3 is a hydrogen atom or an aliphatic hydrocarbon radical containing from 1 to 5 carbon atoms, p is 0 to 3, and R_1 is hydrogen, an aliphatic hydrocarbon radical containing from 1 to 20 carbon atoms, a cycloaliphatic hydrocarbon radical containing 5 to 8 carbon atoms or an optionally hydroxyl, carboxyl, C_{1-14} alkyl, or sulfonic substituted aryl radical containing 6 to 14 carbon atoms, m is 2 to 4, and n is 0 to 100, and

iii) 0.1 to 10 mol % of at least one component of the formula 5a or 5b:



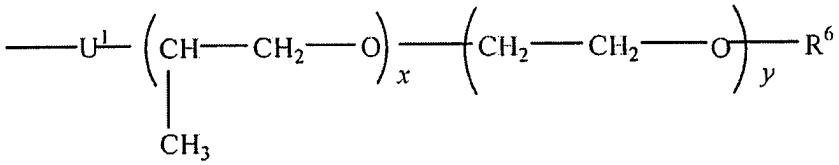
(5a)

or

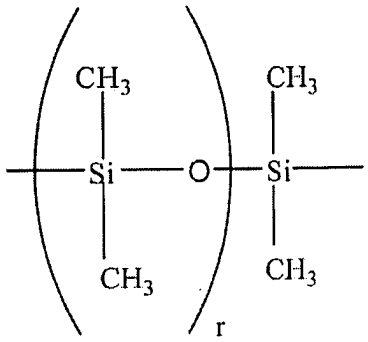


(5b)

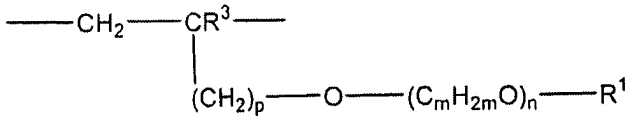
wherein S is a hydrogen atom or $-COOM_a$ or $-COOR_5$, T is $-COOR_5$, -W-R_7, -CO-[-NH-(CH2)3)-]$_s$-W-R_7, -CO-O-$(CH_2)_z$-W-R_7, a radical of the general formula:



or $-(CH_2)_z$-V-$(CH_2)_z$-CH=CH-R_1, or when S is $-COOR_5$ or $-COOM_a$, U_1 is –CO-NHM-, -O- or $-CH_2O$, U_2 is –NH-CO-, -O- or $-OCH_2$, V is –O-CO-C_6H_4-CO-O- or –W-, and W is



R4 is a hydrogen atom or a methyl radical, R5 is an aliphatic hydrocarbon radical containing 3 to 20 carbon atoms, a cycloaliphatic hydrocarbon radical containing 5 to 8 carbon atoms or an aryl radical containing 6 to 14 carbon atoms, R_6=R_1 or



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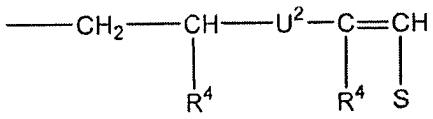
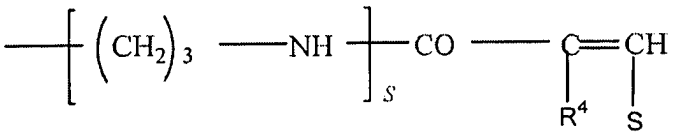
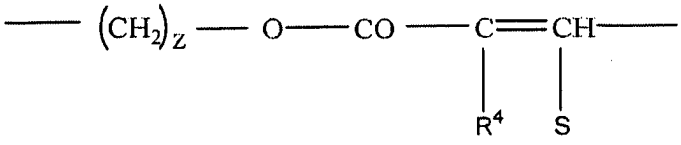


R_7=R_1 or

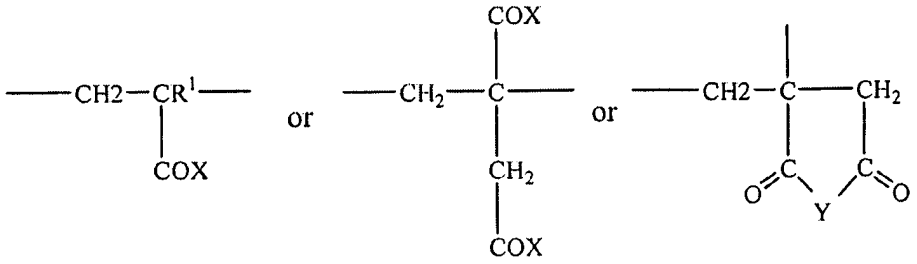


or



r is 2 to 100, s is 1 or 2, x is 1 to 150, y is 0 to 15 and z is 0 to 4;

iv) 0 to 90 mol % of at least one component of the formula 6a, 6b, or 6c:



(6a) (6b) (6c)

wherein M is a hydrogen atom, a mono- or divalent metal cation, an ammonium ion or an organic amine residue, a is 1, or when M is a divalent metal cation a is ½;

wherein X is $-OM_a$,

$-O-(C_mH_{2m}O)_n-R^1$ in which R^1 is a hydrogen atom, an aliphatic hydrocarbon radical containing from 1 to 20 carbon atoms, a cycloaliphatic hydrocarbon radical containing 5 to 8 carbon atoms or an optionally hydroxyl, carboxyl, C_{1-14} alkyl, or sulphonic substituted aryl radical containing 6 to 14 carbon atoms, m is 2 to 4, and n is 0 to 100,

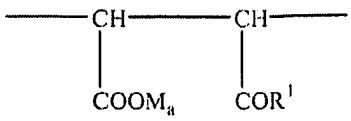
$-NH-(C_mH_{2m}O)_n-R^1$,

$-NHR_2$,$-N(R^2)_2$ or mixtures thereof in which $R^2=R^1$ or $-CO-NH_2$; and

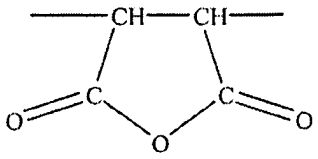
wherein Y is an oxygen atom or $-NR^2$;

j) a copolymer of dicarboxylic acid derivatives and oxyalkylene glycol-alkenyl ethers, comprising:

i) 1 to 90 mol.% of at least one member selected from the group consisting of structural units of formula 7a and formula 7b:



(7a)



(7b)

wherein M is H, a monovalent metal cation, a divalent metal cation, an ammonium ion or an organic amine;

a is ½ when M is a divalent metal cation or 1 when M is a monovalent metal cation;

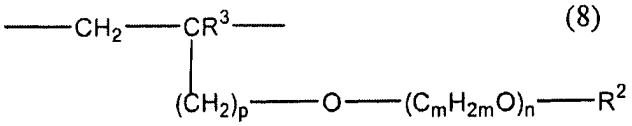
wherein R^1 is $-OM_a$, or

$-O-(C_mH_{2m}O)_n-R^2$ wherein R^2 is H, a C_{1-20} aliphatic hydrocarbon, a C_{5-8} cycloaliphatic hydrocarbon, or a C_{6-14} aryl that is optionally substituted with at least one member selected from the group consisting of $-COOM_a$, $-(SO_3)M_a$, and $-(PO_3)M_{a2}$;

m is 2 to 4;

n is 1 to 200;

ii) 0.5 to 80 mol.% of the structural units of formula 8:



(8)

wherein R^3 is H or a C_{1-5} aliphatic hydrocarbon;

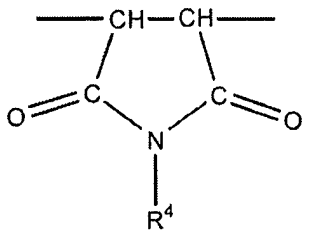
p is 0 to 3;

R^2 is H, a C_{1-20} aliphatic hydrocarbon, a C_{5-8} cycloaliphatic hydrocarbon, or a C_{6-14} aryl that is optionally substituted with at least one member selected from the group consisting of $-COOM_a$, $-(SO_3)M_a$, and $-(PO_3)M_{a2}$;

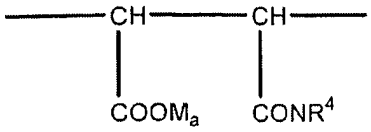
m is 2 to 4;

n is 1 to 200;

iii) 0.5 to 80 mol.% structural units selected from the group consisting of formula 9a and formula 9b:



(9a)



(9b)

wherein R^4 is H, C_{1-20} aliphatic hydrocarbon that is optionally substituted with at least one hydroxyl group, $-(C_mH_{2m}O)_n-R^2$, $-CO-NH-R^2$, C_{5-8} cycloaliphatic hydrocarbon, or a C_{6-14} aryl that is optionally substituted with at least one member selected from the group consisting of $-COOM_a$, $-(SO_3)M_a$, and $-(PO_3)M_{a2}$;

M is H, a monovalent metal cation, a divalent metal cation, an ammonium ion or an organic amine;

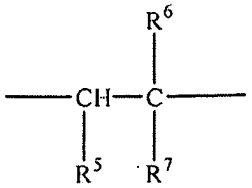
a is ½ when M is a divalent metal cation or 1 when M is a monovalent metal cation;

R^2 is H, a C_{1-20} aliphatic hydrocarbon, a C_{5-8} cycloaliphatic hydrocarbon, or a C_{6-14} aryl that is optionally substituted with at least one member selected from the group consisting of $-COOM_a$, $-(SO_3)M_a$, and $-(PO_3)M_{a2}$;

m is 2 to 4;

n is 1 to 200;

iv) 1 to 90 mol.% of structural units of formula 10



(10)

wherein R^5 is methyl, or methylene group, wherein R^5 forms one or more 5 to 8 membered rings with R^7;

R^6 is H, methyl, or ethyl;

R^7 is H, a C_{1-20} aliphatic hydrocarbon, a C_{6-14} aryl that is optionally substituted with at least one member selected from the group consisting of $-COOM_a$, $-(SO_3)M_a$, and $-(PO_3)M_{a2}$, a C_{5-8} cycloaliphatic hydrocarbon, $-OCOR^4$, $-OR^4$, and $-COOR^4$, wherein R^4 is H, a C_{1-20} aliphatic hydrocarbon that is optionally substituted with at least one -OH, $-(C_mH_{2m}O)_n-R^2$, $-CO-NH-R^2$, C_{5-8} cycloaliphatic hydrocarbon, or a C_{6-14} aryl residue that is optionally substituted with a member selected from the group consisting of $-COOM_a$, $-(SO_3)M_a$, and $-(PO_3)M_{a2}$.

33-50 (Cancelled).

9. Evidence Appendix

Exhibit A is the 37 C.F.R. §1.132 Declaration of Joseph Daczko. The Daczko Declaration was filed with Appellants' Request For Continued Examination on September 22, 2008.

Exhibit B is a copy of page 1 of the Material Safety Data Sheet for the POZZOLITH NC 534 product sold by BASF Construction Chemicals - Admixture Systems. Exhibit B was filed with Appellants' Response on January 31, 2007 and Request For Continued Examination on May 7, 2007.

10. Related Proceedings Appendix

None

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants:	Jeffrey R. BURY, et al.	Docket No.	MBC-0511
Serial No.	10/787,507	Examiner:	Kelechi C. EGWIM
Filing Date:	February 26, 2004	Art Unit:	1713
Title:	STRENGTH IMPROVEMENT ADMIXTURE		

MAIL STOP RCE
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

Certificate of Electronic Transmission
I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office via the Office Electronic Filing System in accordance with 37 C.F.R. §1.6(a)(4).

Salvatore A. Sidoti (type or print name of person signing paper) — (signature of person mailing paper) — 9-22-08 (date)

DECLARATION OF JOSEPH A. DACZKO UNDER 37 CFR §1.132

To the Honorable Commissioner for Patents:

I, Joseph A. Daczko, hereby declare that:

1. I am a resident of City of Hiram in the State of Ohio.

2. I have been employed by the Admixture Systems Division of BASF Construction Chemicals and its corporate predecessors for over 15 years. During my employment with BASF, I have worked the in concrete admixture product research and development.

3. I am a named inventor on United States Patent No. 6,858,074 entitled "High Early Strength Cementitious Composition" (the '074 Patent).

4. The '074 Patent is assigned to Construction Research & Technology GmbH, an affiliate of BASF Construction Chemicals.

5. The '074 Patent is directed to a high early strength cementitious composition that includes a hydraulic cement and a composition of admixtures comprising a polycarboxylate dispersant, an accelerator and a retarder. The combination of polycarboxylate dispersant, accelerator and retarder results in a cementitious composition achieving certain compressive and flexural strengths within a short period of time after placement of the composition.

6. I understand that the presently claimed strength improvement admixture composition comprises about 5 to about 80% polycarboxylate dispersant, about 0.5 to about 40% set retarder, and about 0.5 to about 40% strength improvement additive, based on the total dry weight of the admixture composition.

7. I have reviewed the PTO's Final Office Action dated June 2, 2008 for United States Serial No. 10/787,507. I understand that the claims of United States Serial No. 10/787,507 are currently rejected in view of Table A of the '074 Patent. The Patent Examiner specifically alleges that the dosage ranges for the polycarboxylate, set accelerator and set retarder shown in Table A of the '074 Patent overlap the ranges of polycarboxylate, set retarder and strength improvement additive claimed in United States Serial No. 10/787,507.

8. The ranges for polycarboxylate, set accelerator and set retarder set forth in Table A of the '074 Patent do not specify the weight percentage of the each component of the composition of admixtures. To the contrary, the ranges set forth in Table A of the '074 Patent actually represent the "approximate solids content" of each of the commercially available admixture component, before the individual admixture components are added to the cementitious mixture.

9. The second paragraph following Table A of the '074 Patent expressly discloses "[T]he weight percentages of the components in the high early-strength composition of admixtures are preferably greater than 0% to about 2% retarder; about 5% to about 12% dispersant; and about 85% to about 95% accelerator based on solid (dry) content." It is this specific disclosure, not the disclosure of Table A, which controls the amount of dispersant, accelerator and retarder that is present in the composition of admixtures of the '074 Patent. Therefore, it is my opinion that the '074 Patent does not anticipate the currently pending claims.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United State Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Joseph A. Daczko

9-22-08
Date

Material Safety Data Sheet

BASF

The Chemical Company

POZZOLITH® NC 534 (AKA: CONSET NC)

Version 2.3

06/27/2006

1. PRODUCT AND COMPANY INFORMATION

Company	:	**BASF Corporation** 23700 Chagrin Blvd BEACHWOOD, OH 44122
Telephone	:	216-839-7500
Emergency telephone number	:	(800) 424-9300 (703) 527-3887 (Outside Continental US)
Product name	:	POZZOLITH® NC 534 (AKA: CONSET NC)
MSDS ID No	:	10033
TSCA Inventory	:	All components of this product are included, or are exempt from inclusion, in the EPA Toxic Substances Control Act (TSCA) Chemical Substance Inventory.
Canadian DSL	:	All components of this product are included, or are exempt from inclusion, in the Canadian Domestic Substance List (DSL).

2. HAZARDOUS INGREDIENTS

Chemical	CAS No.	TLV	STEL	PEL	CEIL	Weight %
CALCIUM(II) NITRATE (1:2)	10124-37-5		N.E.	N.E.	N.E.	30.00 - 60.00 %
SODIUM THIOCYANATE	540-72-7	N.E.	N.E.	N.E.	N.E.	1.00 - 5.00 %

3. HAZARDS IDENTIFICATION

	HEALTH	FLAMMABILITY	PHYSICAL HAZARD
HMIS® Rating	2	0	0

WHMIS Class : D2B

Primary Routes of Entry : Inhalation
Eye contact
Skin contact

Effects of Overexposure

Inhalation	Vapors can be irritating to respiratory tract and mucous membranes
Skin	Can cause slight to moderate irritation. Prolonged or repeated skin contact tends to remove skin oils possibly leading to irritation and dermatitis.
Eyes	Can cause slight to moderate transient irritation, redness, tearing and blurred vision
Ingestion	Intake can cause gastrointestinal irritation and nausea
Chronic exposure	No known information available